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EXAMINER
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TRUONG, CAM Y T

ART UNIT	PAPER NUMBER
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2162

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/624,726	Applicant(s) PETCULESCU ET AL.	
	Examiner Cam Y T. Truong	Art Unit 2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 10-38 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/23/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's election without traverse of Group I (claims 1-5, 10-38) in the reply filed on 5/5/2006 is acknowledged.

Claims 1-5, 10-38 are pending in this Office Action.

#### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1, 3-5, 10, 12-14, 15, 17-19, 20-29, 34-38 are rejected under 35 U.S.C.101 because the language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practice application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

Claims 1, 3-5, 10, 12-14, 15, 17-19, 20-25, 34-38 recite "a computerized method for processing a query directed to a multidimensional database". However, the claims fail to contain a useful, concrete and tangible result. Thus, the bodies of claims are merely abstract idea and is being processed without any links to a practical result and a practical application in the technology arts.

Claims 26-29 recite "a computerized system". However, the claims fail to contain a useful, concrete and tangible result. Thus, the bodies of claims are merely abstract idea and is being processed without any links to a practical result and a practical application in the technology arts.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34 recites the claimed limitation “the query indicating that calculated members of the database be used, and the query not specifying any calculated members of the database” in page 7, lines 3-5. This limitation is unclear whether how the query indicating the calculated members of the database and there is a conflict as the query indicates calculated members of the database is used; however, the query not specifying any calculated members of the database.

Claims 35-38 are dependent on claim 34; thus, they are rejected under the same rational.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2, 10-11, 34-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Venkatasubramanian et al (or hereinafter "ven") (US 6226647).

As to claims 1 and 10, Ven teaches a computerized method for processing a query directed to a multidimensional database (col. 6, lines 55-60):

"determining a subset of the database for each member of an input data set specified by the query" as a list of records or rows of the database for each column of an input data set such as Year, Region, Product, Sales, which is specified by the query (figs. 7a-7b, col. 11, lines 2-20);

"processing the query using any calculated members of the database that is within at least one of the subsets of the database, without the query specifying any calculated members of the database" as processing the query using TCR or East as calculated members of the database that within the first record or row of the database. The TCR or East is not specified by the query 1 (figs. 7a-7b, col. 11, lines 2-20).

As to claims 2 and 11, Ven teaches the claimed limitation "wherein processing the query includes generating an output data set to include the members of the input data set and the encompassed calculated members of the data" as (figs. 7a-7b, col. 11, lines 2-20).

As to claim 34, Ven teaches the claimed limitations:

"receiving a query specifying an input data set" as receiving a list of records or rows of the database for each column of an input data set such as Year, Region, Product, Sales, which is specified by the query (figs. 7a-7b, col. 11, lines 2-20);

"the query indicating that calculated members of the database are used, and the query not specifying any calculated members of the database" as the data records that are used as the ultimate basis for generating a multi-dimensional view are retrieved from a database or other source of records, such as a data file. Database management systems are employed to manage such databases. These systems provide for storing, accessing and manipulating data records. Records can be extracted from a database management system by submitting a query to a system. In response to the query, the database management system searches the records in the database to identify and provide a set of records, which correspond to the requirements set forth in the query. The above information shows that the system processed the query that has to include a set of records and records in the database. This set of records is presented as non-calculated members. Records in the database are represented as calculated members. This query does not specify any records of the database (col. 2, lines 15-27).

"determining a subset of the database for each member of the input data set specified by the query" as the data records that are used as the ultimate basis for generating a multi-dimensional view are retrieved from a database or other source of records, such as a data file. Database management systems are employed to manage such databases. These systems provide for storing, accessing and manipulating data records. Records can be extracted from a database management system by submitting

a query to a system. In response to the query, the database management system searches the records in the database to identify and provide a set of records, which correspond to the requirements set forth in the query. The above information shows that the system processed the query that has to include a set of records and records in the database. This set of records is presented as non-calculated members. Records in the database are represented as calculated members. This query does not specify any records of the database (col. 2, lines 15-27);

“identifying if there are any calculated members of the database corresponding to the subsets of the database” as (col. 2, lines 15-27);

“processing the query, if there are any calculated members of the database corresponding to the subsets of the database, using the identified calculated members” as (col. 3, lines 15-27; figs. 7a-7b, col. 11, lines 2-20).

As to claims 35, 36, Ven teaches the claimed limitation “using the non-calculated members specified by the input data set” as (figs. 7a-7b, col. 11, lines 2-20).

8. Claims 15-20, 22-23, 25- 26, 28-29 , 37 are rejected under 35 U.S.C. 102(e) as being anticipated by DeKimpe et al (or hereinafter “DeKimpe”) (US 6665682).

As to claim 15, DeKimpe teaches the claimed limitations:

“a processor and a computer-readable medium” as a processor and computer readable device. The computer readable device is represented as a computer-readable medium (col. 4, lines 43-45);

“an operating environment executing on the processor from the computer-readable medium” as using one or more computer programs, each of which executes under the control of an operating system. The computer programs and operating system are all tangibly embodied in a computer-readable device. The above information shows that the operating system executing on the processor of computer readable device (col. 4, lines 40-45; col. 4, lines 55-60);

“an OLAP server executing with the operating environment and maintaining a multidimensional database” as the computer programs with operating system are comprised of instructions which when read and executed by the computers 100 and 102 cause the computer 102 or OLAP server to perform various database operations such update, insert, delete operations against one or more relational databases 118 stored on remote or local data storage device for maintaining the data in a relational database 118 (col. 5, lines 1-30; col. 11, lines 30-34),

“wherein the OLAP server processes a database query by determining a subset of the database for each member of an input data set specified by the query” as (col. 10, lines 25-67);

“including in the processing of the query any calculated members of the database that are within the at least one of the subsets of the database, without the query specifying any calculated members of the database” as (col. 10, lines 25-67; col. 11, lines 1-5).



As to claim 16, DeKimpe teaches the claimed limitation “wherein the OLAP server generates an output data set to include the members of the input data set and the encompassed calculated members of the database” as (col. 10, lines 25-67; col. 11, lines 1-5).

As to claims 17 and 28, DeKimpe teaches the claimed limitation “wherein the OLAP server receives the query from an OLAP client application via a query processor” as (col. 10, lines 20-35; col. 4, lines 40-45).

As to claims 19 and 29, DeKimpe teaches the claimed limitation “wherein the database is a relational database system” as (col. 7, lines 55-65).

As to claim 18, DeKimpe teaches the claimed limitation “wherein for each member of the input data set the OLAP server identifies, within a dimension of the database, each member’s siblings, the member’s descendants and the descendants of the siblings” as (col. 6, lines 35-60).

As to claims 20 and 23, DeKimpe teaches the claimed limitations:

“processing a query directed to a multidimensional database, wherein the query specifies an input data set” as (col. 10, lines 25-67; col. 11, lines 1-5).

“determining whether the query includes an extension directing an OLAP server to automatically exclude calculated members of the input data set during the processing of the query” as (col. 10, lines 25-67);

“based on the determination, processing the query using non-calculated members specified by the input data set” as (col. 10, lines 25-67; col. 11, lines 1-5).

“an OLAP server executing with the operating environment and maintaining a multidimensional database” as the computer programs with operating system are comprised of instructions which when read and executed by the computers 100 and 102 cause the computer 102 or OLAP server to perform various database operations such update, insert, delete operations against one or more relational databases 118 stored on remote or local data storage device for maintaining the data in a relational database 118 (col. 5, lines 1-30; col. 11, lines 30-34),

“wherein the OLAP server processes a database query by determining a subset of the database for each member of an input data set specified by the query” as (col. 10, lines 25-67);

“including in the processing of the query any calculated members of the database that are within the at least one of the subsets of the database, without the query specifying any calculated members of the database” as (col. 10, lines 25-67; col. 11, lines 1-5).

As to claims 22 and 25, DeKimpe teaches the claimed limitation “wherein processing the query...an OLAP server” as col. 5, lines 1-30; col. 11, lines 30-34).

As to claim 26, DeKimpe teaches the claimed limitations:

“a processor and a computer-readable medium” as a processor and computer readable device. The computer readable device is represented as a computer-readable medium (col. 4, lines 43-45);

“an operating environment executing on the processor from the computer-readable medium” as using one or more computer programs, each of which executes under the control of an operating system. The computer programs and operating system are all tangibly embodied in a computer-readable device. The above information shows that the operating system executing on the processor of computer readable device (col. 4, lines 40-45; col. 4, lines 55-60);

“an OLAP server executing with the operating environment and maintaining a multidimensional database” as the computer programs with operating system are comprised of instructions which when read and executed by the computers 100 and 102 cause the computer 102 or OLAP server to perform various database operations such update, insert, delete operations against one or more relational databases 118 stored on remote or local data storage device for maintaining the data in a relational database 118 (col. 5, lines 1-30; col. 11, lines 30-34),

“wherein the OLAP server processes a database query by determining whether the query includes an extension directing the OLAP server to automatically exclude calculated members of an input data set” as (col. 10, lines 25-67);

“based on the determination, processing the query using only the non-calculated members specified by the input data set” as (col. 10, lines 25-67; col. 11, lines 1-5).

As to claim 37, DeKimpe teaches the claimed limitation “processes each non-calculated member specified by the input data set” as (col. 10, lines 25-67; col. 11, lines 1-5).

9. Claims 30-31 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by BenHadda et al (or hereinafter “BenHadda” ) (US 6366904).

As to claim 30, BenHadda teaches the claimed limitations:

“parsing a received query to identify whether the query contains a query extension that indicates specifically how calculated members should be handled in processing the query” as (col. 6, lines 22-67);

“when a query directive is identified that directs that calculated members be executed from the output of the query then processing the query using the non-calculated members specified by the input data set” as (fig. 3, col. 5, lines 60-67; col. 6, lines 1-30);

“when a query directive is identified that directs that calculated members be included in the output of the query then performing at least the steps of: determining a subset of the database for each member of an input data set specified by the query” as (col. 5, lines 60-67; col. 1, lines 1-30);

“processing the query using any calculated members of the database that is within the at least one of the subsets of the database, without the query specifying any calculated members of the database” as (figs. 3&4, col. 6, lines 30-67).

As to claim 31, BenHadda teaches the claimed limitation “wherein processing the query include generating an output data set to include the members of the input data set and the encompassed calculated members of the database” as (col. 6, lines 30-67).

As to claim 38, BenHadda teaches the claimed limitation “using the non-calculated members specified by the input data set” as (col. 6, lines 30-67).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3-5 and 12-14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Venkatasubramanian et al (or hereinafter “ven”) (US 6226647) in view of DeKimpe et al (or hereinafter “DeKimpe”) (US 6665682).

As to claims 3 and 12, Ven does not explicitly teach the claimed limitation “wherein processing the query includes processing the query with an OLAP server”. DeKimpe teaches processing the query includes the query with an OLAP server (fig. 1, col. 10, lines 20-35).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply DeKimpe’s teaching of processing the query includes

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the query with an OLAP server to BenHadda's system in order to offer consistently rapid response database access, regardless of database size and complexity.

As to claims 4 and 13, Ven does not explicitly teach the claimed limitation "performing the determining step and the processing step when the query includes an extension directing an OLAP server to include calculated members".

DeKimpe teaches processing the query includes the query with an OLAP server to include rows as calculated members (fig. 1, col. 10, lines 20-35).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply DeKimpe's teaching of processing the query includes the query with an OLAP server to BenHadda's system in order to offer consistently rapid response database access, regardless of database size and complexity.

As to claims 5 and 14, Ven does not explicitly teach the claimed limitation "performing the determining step and the processing step when the query includes an extension directing an OLAP server to include calculated members".

DeKimpe teaches a query includes index key that is an encoding of one member from each sparse dimension that identify one or more dense data block in the multi-dimensional database to include rows from the fact table into a dense data block. Rows as calculated members (col. 10, lines 20-67; col. 11, lines 1-5).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply DeKimpe's teaching to Ven's system in order to offer

consistently rapid response database access, regardless of database size and complexity.

12. Claims 21, 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeKimpe et al (or hereinafter "6665682) in view of Netz (USP 6366905) (or hereinafter "Netz'905).

As to claims 21, 24 and 27, DeKimpe does not explicitly teach the claimed limitation "the OLAP server initializing an output data set .....using the output data set". However, Netz'905 teaches the claimed limitations:

"initializing an output data set to an empty set" as every aggregation is initially a candidate aggregation that may be selected and moved from the candidate set to the selected set (col. 12, lines 35-45). This information shows that the system have to initialize the selected set to be an empty set before moving or selecting candidate aggregation to the selected set. This selected set is represented as output data set; "copying the non-calculated members of the input data set to the output data set" as every aggregation is initially a candidate aggregation that may be selected and moved from the candidate set to the selected set. Using aggregations of sales per year to be answered a query as to yearly sales of a certain product. This information shows that the system copies candidate aggregation to the selected set. Where, the candidate aggregation such sales per year are non-calculated members before they are answer to the query and candidate set is represented as input data set (col. 12, lines 40-50; col. 6, lines 45-50);

“processing the query using the output data set” as every aggregation is initially a candidate aggregation that may be selected and moved from the candidate set to the selected set. Using aggregations of sales per year to be answered a query as to yearly sales of a certain product. This information shows that in order to process the query as yearly sales of a certain product the system using the selected set, which is represented as aggregations of sales per year (col. 12, lines 40-50; col. 6, lines 45-50).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Netz’905’s teaching of every aggregation is initially a candidate aggregation that may be selected and moved from the candidate set to the selected set. Using aggregations of sales per year to be answered a query as to yearly sales of a certain product. This information shows that the system copies candidate aggregation to the selected set. Where, the candidate aggregation such sales per year are non-calculated members before they are answer to the query and candidate set is represented as input data set to DeKimpe’s system in order to eliminate at least in part, the need to retrieve and manipulate more detailed data to answer a query.

13. Claims 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over BenHadda in view of DeKimpe et al (or hereinafter “6665682)

As to claim 32, BenHadda does not explicitly teach the claimed limitation “wherein processing the query includes the query with an OLAP server”.

DeKimpe teaches processing the query includes the query with an OLAP server (fig. 1, col. 10, lines 20-35).



It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply DeKimpe's teaching of processing the query includes the query with an OLAP server to BenHadda's system in order to offer consistently rapid response database access, regardless of database size and complexity.

As to claim 33, BenHadda does not explicitly teach the claimed limitation "wherein determining a subset for each member includes identifying within a dimension of the database each member's siblings, the member's descendants and descendants of the siblings".

DeKimpe teaches Cubes generally have hierarchies of data with each dimension. Members of a dimension are included in a calculation to produce a consolidated total for a parent member. Children themselves are consolidated levels, which requires that they have children. A member is a child for more than one parent, a child's multiple parents is at the same hierarchical level, allowing complex, multiple hierarchical aggregations within any dimension (col. 6, lines 45-52). The above information shows that each member includes a dimension of the database each member's siblings, descendants.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply DeKimpe's teaching of Cubes generally have hierarchies of data with each dimension. Members of a dimension are included in a calculation to produce a consolidated total for a parent member. Children themselves are consolidated levels, which requires that they have children. A member is a child for

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more than one parent, a child's multiple parents is at the same hierarchical level, allowing complex, multiple hierarchical aggregations within any dimension to BenHadda's system in order to provide an opportunity for optimizing multidimensional query by using hierarchical context, allow complex multidimensional queries to be built and executed faster for removing or adding a dimension of a cube.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

DeKimpe et al (US 6421677).

Graefe (US 6298342).

***Contact Information***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T. Truong whose telephone number is (571) 272-4042. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Cam Y T Truong  
Examiner  
Art Unit 2162  
12/27/2005